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THE TESTIMONY

— of —

A Decade



roofing tin

MANUFACTURED BY
AMERICAN SHEET AND TIN PLATE COMPANY
PITTSBURGH, PA.

THE TESTIMONY

— of —

A Decade



TEN YEARS OF ACHIEVEMENT

— for —

Keystone Copper Steel

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

—DISTRICT SALES OFFICES—

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Export Representatives: United States Steel Products Company, New York City

Pacific Coast Representatives: United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle

PRINTED IN U. S. A.



KEYSTONE COPPER STEEL—An alloy made by the addition of a certain percentage of copper to well made steel—thereby greatly increasing its lasting or rust-resisting qualities in actual service.



The Testimony of a Decade!

TEN YEARS OF ACHIEVEMENT

Our First Claims for Keystone Copper Steel
are Substantiated

"TIME will tell!" Not every manufacturer, however, is willing to wait for the *unerring verdict* of time, or trust his product to the final and decisive results that are certain to follow.

In 1911 our copper steel was first placed upon the market in a very modest and limited way—when 5,311 tons were sold. In 1912, however, following still further research and experiment, we were fully convinced of the merits of this product, and announced to the trade that we were manufacturing Sheets and Tin Plates alloyed with copper which possessed superior *rust-resisting* qualities, and free samples were offered for tests and analyses. This was the beginning for Keystone Copper Steel.

More than ten years have now elapsed since our first announcement. Every year has added to the growing strength and reputation of Keystone quality—and from its modest beginning of 5,311 tons,



Keystone Copper Steel has now reached a production of upwards of 300,000 tons annually. This is a notable achievement in the sheet steel industry. It is evidence that the superiority of copper steel is recognized. When our first announcements appeared, and for several years thereafter, a number of competitors endeavored to discredit our efforts. Time, however, has proved the *correctness* and *sincerity* of our claims.

In July, of 1912, we included the following statement in our advertising:

“Do not embarrass other manufacturers by asking them if there is any merit in Copper Bearing Open Hearth Roofing Tin. They will eventually supply it because you will insist upon having it. Now made exclusively by this Company—the leader in all movements for better roofing.”

Today this has come true. Every large producer of sheet steel products (including those who formerly ridiculed this alloy), is supplying copper steel, under some name or designation.

WHY?

BECAUSE—Keystone Copper Steel was the successful pioneer in providing the trade with a *high quality that gave the user added wear and protection* against loss from rust and corrosion, and at a reasonable cost.

BECAUSE—The principle of rust-resistance, as we have solved it, is both *scientifically correct* and *practically sound*—an alloy



against rust. Just as steel, for example, is alloyed for machining quality, for hardness, for toughness, for strength, or against electrical losses—just so it can be *alloyed against active loss or deterioration from rust*. Copper does it. Time and weather prove this beyond argument or successful contradiction.

BECAUSE—Keystone advertising is truthful and conservative. Keystone Copper Steel has always been frankly and honestly described and promoted. No extravagant claims of “rust-proof,” “non-rusting,” or “can’t rust” are exploited, and no finespun theories with theoretical or fanciful conclusions have been advanced that could not be substantiated in actual service by the user. Copper is not a panacea for all sheet metal ills. Copper steel *is highly rust-resisting*—just that. It retards corrosion and is the *longest-wearing* and *most enduring* sheet steel or iron manufactured. You may be sure if there were a better way to accomplish this than the Keystone way, we would have adopted it long ago. The material is honestly named for exactly what it is—*copper* alloyed with *steel*.

BECAUSE—The Keystone *price is reasonable*—just a fair and honest charge for alloying with copper to secure the additional rust-resistance. You pay for that—and no more.

BECAUSE—Keystone *reputation is firmly established*. Its value has been demonstrated by hosts of independent service, time, and weather tests. Added to this is the final and authoritative statement of the American Society for Testing Materials, which after years of testing and proving, under widely



varying conditions of climate and atmosphere, make the positive statement—

“Copper-bearing metal shows marked superiority in rust-resisting properties as compared to non-copper-bearing metal of substantially the same general composition, from which superiority we may truly anticipate a marked increase in the service life for copper-bearing metals under atmospheric exposure of uncoated sheets.”

—*Proceedings of American Society for Testing Materials,*
Vol. 21, 1921.

This evidence is *convincing and unquestioned* by every well informed user—evidence that is not biased and cannot be controverted. It is a *positive record* that the product has fully proved its excellence.



Findings of Fact by Eminent Authorities Who Have Investigated Merits of Copper Steel

*W. H. Walker, Professor of Chemical Engineering,
Massachusetts Institute of Technology.* ⁽¹⁾

"Impartial evidence is now legion that no commercial iron or steel so well withstands atmospheric corrosion as does steel containing approximately 0.2 per cent copper."

*Wm. D. Richardson, Chemical Engineer,
Swift & Company, Chicago.* ⁽¹⁾

"Of the entire list of ordinary and special, open and proprietary varieties of iron and mild-steel which have been advertised as possessing corrosion-resisting properties, copper-bearing iron appears to have some special and peculiar properties which seem to warrant special consideration."

"As the result of many exposure experiments by different investigators, the conclusion seems warranted that any of the ordinary varieties of iron with the addition of from 0.10 to 0.50 per cent copper are more resistant to atmospheric corrosion than without this addition."

*O. W. Storey, Metallurgical Engineer,
C. F. Burgess Laboratories, Madison, Wis.* ⁽¹⁾

"My own data collected from corroded fence wire also show that copper steel is much more resistant to corrosion both in an acid atmosphere and in a comparatively pure atmosphere."

*E. A. Richardson, Chemist, Cleveland, Ohio.
L. T. Richardson, Chemical Engineer, New York City.* ⁽²⁾

"Copper-bearing steels are decidedly superior to pure iron, steel, or charcoal iron."

*D. M. Buck, Metallurgical Engineer, Pittsburgh, Pa.
J. O. Handy, Director, Pittsburgh Testing Laboratory, Pittsburgh, Pa.* ⁽³⁾

"Sheet steel or iron containing copper shows greatly increased corrosion resistance when exposed to atmospheric conditions."

*Samuel L. Hoyt, E. M., Ph. D., Associate Professor of Metallography,
University of Minnesota, Minneapolis, Minn.* ⁽⁴⁾

"The general conclusion which, it is believed, may be drawn from this exposure test is that the so-called copper-bearing steel, in which the copper content is about 0.20 to 0.25 per cent, offers the greatest resistance to corrosion of the common sheeting materials."

(1) Transactions of the American Electrochemical Society, 1921.

(2) Transactions of the American Electrochemical Society, 1916.

(3) Journal of Industrial and Engineering Chemistry, March, 1916.

(4) Chemical & Metallurgical Engineering, Aug. 1, 1919.



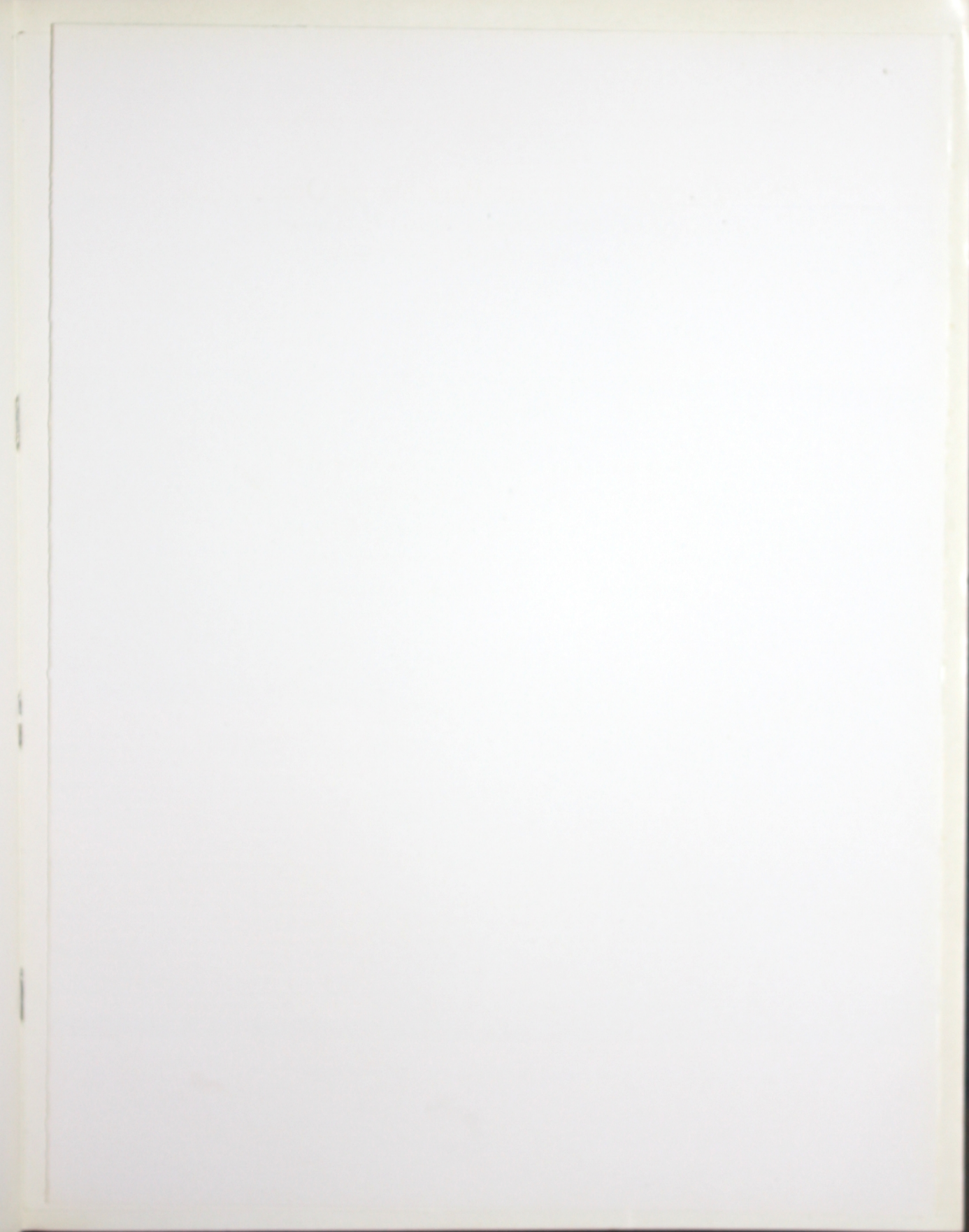
Photograph on Opposite Page Shows Official Test
Conducted to Determine the Actual Rust-resistance
of *Uncoated* Iron and Steel Sheets

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This photograph is taken from the Official Report of Committee A-5 on Corrosion, American Society for Testing Materials, 1922; and shows the condition of the various panels after five years and four months of exposure.

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Attention is directed to the marked superiority of copper-steel in resisting weather corrosion. A careful study of this photograph is too convincing to require extended words or argument as to the merits of the copper-steel alloy.





The Graphic Chart Attached on Opposite Page Compares the Actual Life of each Group of 22 Gauge *Uncoated* Sheets shown in Official Test Photograph on Preceding Page

In the Low Copper Content groups (under 0.05%)
considered non-copper bearing—

All Open Hearth or Bessemer Steel had failed at.....22 months exposure
All Open Hearth "Pure Iron" had failed at28 months exposure
All Wrought Iron had failed at.....28 months exposure

In the High Copper Content groups (0.15% copper or over)
considered copper bearing—

All Puddled Iron had failed at.....41 months exposure
80% of Open Hearth "Pure Iron" had failed at.....46 months exposure
NO FAILURES in Keystone Copper Steel at.....46 months exposure
All Open Hearth "Pure Iron" had failed at52 months exposure
Only 20% of Keystone Copper Steel had failed at.....52 months exposure

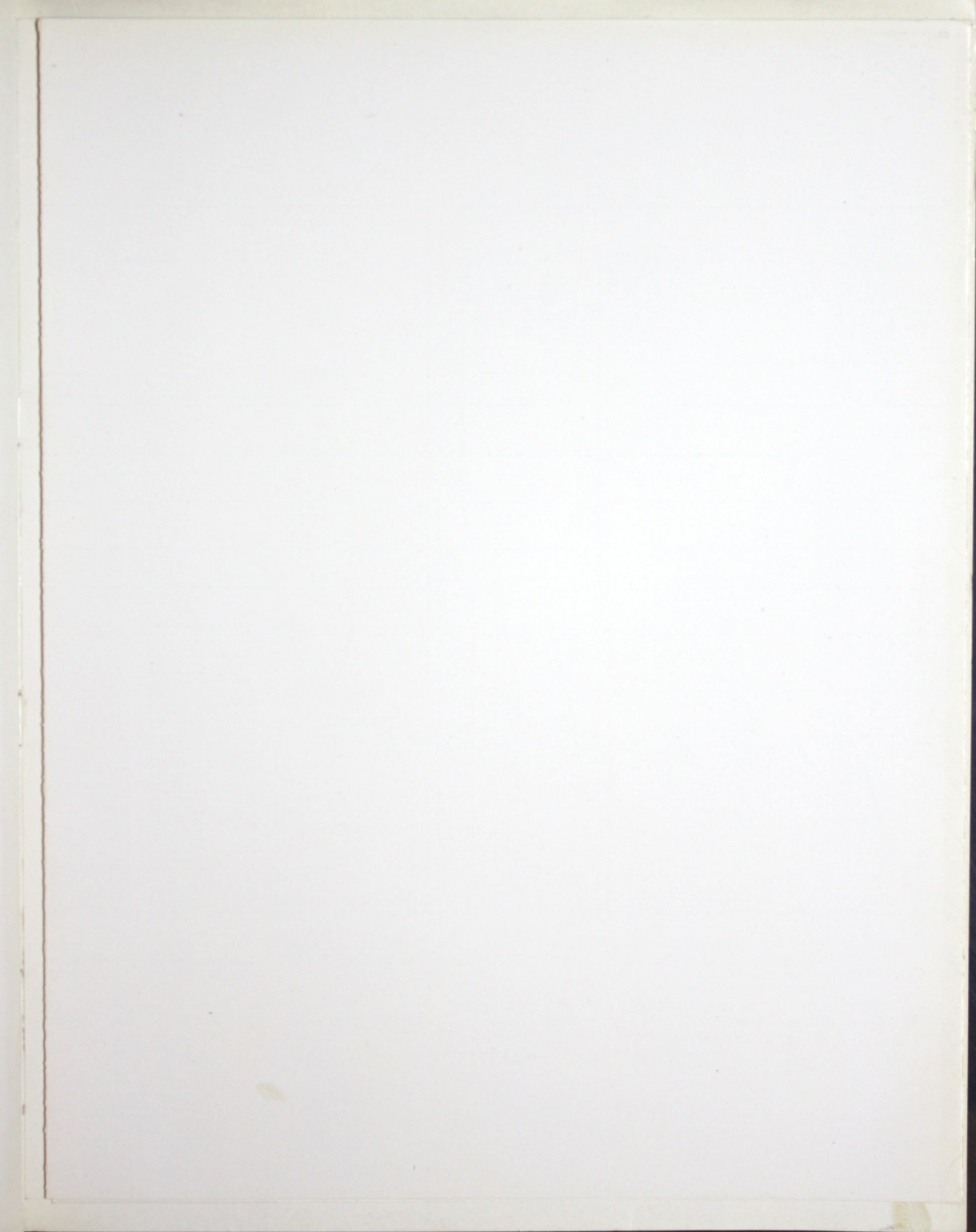
After 64 months exposure out of the total 230 sheets originally exposed, only
38 sheets had NOT failed, and ALL 38 were COPPER BEARING STEEL.

These 38 sheets comprise the following:

Groups "H," "I" and "K" (Keystone Copper Steel)	31
Groups "Z" - - - - - - -	<u>7</u>
Total - - - - - - -	38

The 31 sheets of *Keystone Copper Steel* which were still sound represent
67.4% of the ORIGINAL SHEETS exposed.

The 7 sheets still sound in the Copper Bearing "Z" groups represent
41.2% of the original sheets exposed in these groups.





DEMAND

KEYSTONE COPPER STEEL GALVANIZED for culverts, tanks, bins, flumes, roofing, siding, gutters, spouting, eaves trough, ventilators, skylights, cornices, utensils, and all sheet metal work to which Galvanized Sheets are adapted.

KEYSTONE COPPER STEEL BLACK SHEETS for stoves, ranges, stampings, stove-pipe, elbows, fittings, steel barrels, kegs, machinery parts, implement parts, etc., that must withstand wear and corrosion.

KEYSTONE COPPER STEEL TERNE PLATES for roofing, valleys, gutters, metal shingles, firedoors, flashings, etc. If you insist upon Keystone quality, the right weight of coating (20 to 40 pounds), and good workmanship—you will secure metal roofs that are durable, fireproof, and lightning proof—and a satisfaction throughout the years.

KEYSTONE COPPER STEEL BRIGHT TIN PLATES for use in the manufacture of such articles as are benefited by increased corrosion resistance.

Your Needs Complete



If you use sheet metal of any type and for any purpose, we can furnish a product adapted to your particular requirements. We combine good materials with the most approved manufacturing methods.

The completeness of our organization includes among our twenty-seven works the largest sheet mill and tin mill in America and provides every facility to furnish a diversified line of Sheets and Tin Plates.

But more than this—there is the spirit of service that puts these extensive facilities into action, and keeps them working for you. It will compensate you to tie to the experience and service offered by this Company.



American Sheet and Tin Plate Company

Manufacturers of Sheet and Tin Mill Products
for all purposes

Apollo Best Bloom Galvanized Sheets
Apollo-Keystone Copper Steel Galvanized Sheets
Black Sheets of Every Description
Keystone Copper Steel Black Sheets
Keystone-Wellsville Polished Steel Sheets
Corrugated Sheets—Black, Painted, Galvanized
Formed Roofing and Siding Products
Keystone Copper Steel Terne Plates
Automobile Sheets—all Grades
Sheets for Electrical Apparatus
Special Sheets for Stamping
Long Terne Sheets
Bright Tin Plates
Black Plate, Etc.



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